# SAL-UGP Series

## Vacuum Powder Loader

Date: Apr., 2021
Version: Ver.C (English)

SHINI

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# 1. General Description

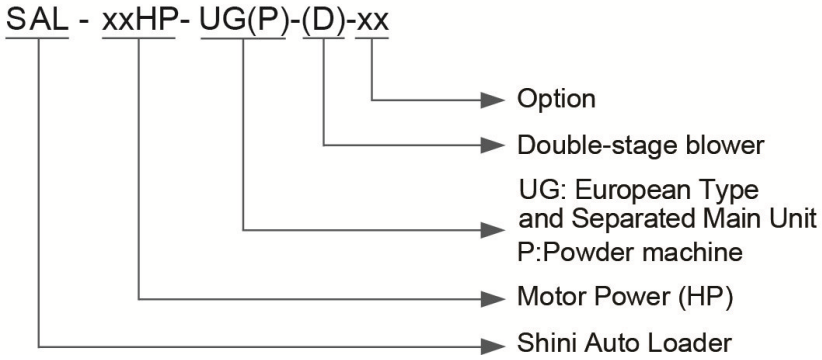
Read this manual carefully before operation to prevent damage of the machine or personal injuries.

SAL-UGP series separate-vacuum hopper loader has all features that come with SAL-UG series product. There is also double-stage blower available as an option. Different model of hopper is available for each individual output capacity needs, especially suitable for 30% and 100% powder loading.

Model: SAL-5HP-UGP (Main Unit)  Plate Filter + Bag Filter

SHR-P-60U material storage tank+ storage hopper

## 1.1 Coding Principle




## 1.2 Feature

- Adopt LCD displayer + microcomputer controller which features direct display and easy operation;
- The controller has independent mixing and shut-off output function, which can control the proportional valve SPV-U and shut-off box SBU directly;
- Equipped with RS485 communication interface;
- Equipped with audible and visual alarm
- Adopts integrated cyclone filter that can effectively reduce the filter loader;
- Auto cleaning function without shutdown that can prolong its working time.
- Equipped with vacuum breaking valve to protect the protector;
- Stainless steel hopper to ensure no materials contamination.

All service work should be carried out by a person with technical training or corresponding professional experience. The manual contains instructions for both handling and servicing. Chapter 6, which contains service instructions intended for service engineers. Other chapters contain instructions for the daily operator.

Any modifications of the machine must be approved by SHINI in order to avoid personal injury and damage to machine. We shall not be liable for any damage caused by unauthorized change of the machine.

Our company provides excellent after-sales service. Should you have any problem during using the machine, please contact the company or the local vendor.

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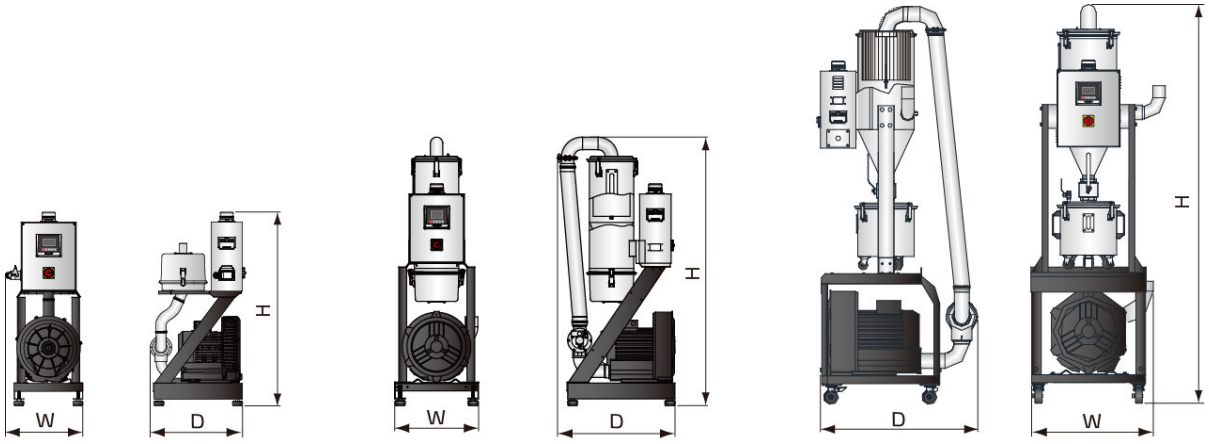
# 1.3 Technical Specifications

## 1.3.1 Dimension (Main Unit)




SAL-1HP~3HP-UGP SAL-5HP-UGP SAL-10HP-UGP

Picture 1-1：Dimension

## 1.3.2 Specifications

For Conveying Raw Material Contains 30% Powder (BAG FILTERS are fitted to the powder receiver)

Table 1-1：Specifications

| Main Unit | | | | Powder Receiver | | | | | | Filter Cloth Quantity | Dimensions (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Model SAL- | Ver. | Motor Power (kW) (50/60Hz) | Specification | Applied to | Conveying Pipe Dia. | Air Suction Pipe Dia. | Hopper Capacity (L) | Hopper Dia. (mm) | Conveying Capacity (kg/hr) | | (Main Unit) H×W×D |
| 1HP-UGP | C | 0.75 / 0.85 | 3Φ | SHR-P-12U | 1.5 | 1.5 | 12L | Φ270 | 300 | 3 | 1000×400×500 |
| 2HP-UGP | C | 1.5 / 1.8 | | SHR-P-30U | | | 30L | Φ380 | 400 | 7 | |
| 3HP-UGP | B | 1.85 / 2.0 | | SHR-P-60U | 2” | 2” | 60L | Φ440 | 650 | 10 | |
| 5HP-UGP | C | 3.75 / 4.2 | | | | | | | 1200 | | 1380×470×600 |
| 5HP-UGP-D | C | 3.4 / 4.2 | | | | | | | 1350 | | 1380×670×600 |
| 10HP-UGP | C | 7.5 / 8.6 | | SHR-P-90U | 2.5” | 2.5” | 90L | Φ550 | 2000 | 19 | 2015×620×795 |
| 10HP-UGP-D | B | | | | | | | | | | 2015×790×795 |

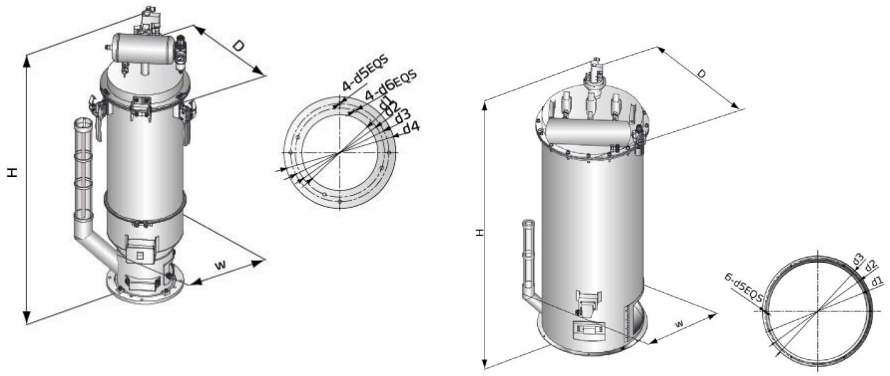
For Conveying Raw Material Contains 100% Powder (PLATE FILTERS are fitted to the powder receiver)

| Main Unit | | | | Powder Receiver | | | | | | Filter Cloth Quantity | Dimensions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Model SAL- | Ver. | Motor Power (kW) (50/60Hz) | Specifi-cation | Applied to | Conveying Pipe Dia. | Air Suction Pipe Dia. | Hopper Capacity (L) | Hopper Dia. (mm) | Conveying Capacity (kg / hr) | | (Main Unit) H×W×D |
| 1HP-UGP | C | 0.75 / 0.85 | 3Φ | SHR-P-30U-1 | 1.5” | 1.5” | 12L | Φ270 | 300 | 1 | 1000×400×500 |
| 2HP-UGP | C | 1.5 / 1.8 | | SHR-P-30U-2 | | | 30L | Φ380 | 400 | 2 | |
| 3HP-UGP | B | 1.85 / 2.0 | | SHR-P-60U-3 | 2” | 2” | 60L | Φ440 | 650 | 3 | |
| 5HP-UGP | C | 3.75 / 4.2 | | | | | | | 1200 | | 1380×470×600 |
| 5HP-UGP-D | C | 3.4 / 4.2 | | | | | | | 1350 | | 1380×670×600 |
| 10HP-UGP | C | 7.5 / 8.6 | | SHR-P-90U-5 | 2.5” | 2.5” | 90L | Φ550 | 2000 | 5 | 2015×620×795 |
| 10HP-UGP-D | B | | | | | | | | | | 2015×790×795 |

Note: 1) Test condition of conveying capacity: Use dried powder plastic material without any viscosity and its bulk density is 0.6kg/L, vertical conveying height: 4m, horizontal conveying distance: 5m.
2) Power supply: 3Φ, 230/400/460/575V, 50/60Hz.

We reserve the right to change specifications without prior notice.

## 1.3.3 The Outer Dimension of Hopper



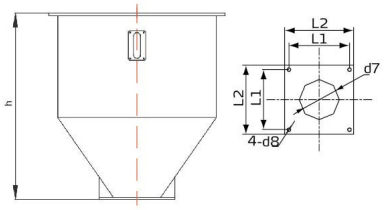

SHR-P-12U SHR-P-30U~SHR-P-90U

Picture 1-2：The Outer Dimension of Hopper

## Table 1-2：The Installation Dimension of Hopper

| Model | SHR-P-12U | SHR-P-30U | SHR-P-30U-1 | SHR-P-30U-2 | SHR-P-60U | SHR-P-60U-3 | SHR-P-90U | SHR-P-90U-5 |
|---|---|---|---|---|---|---|---|---|
| capacity（L） | 12 | 30 | 30 | 30 | 60 | 60 | 90 | 90 |
| H（mm） | 940 | 1325 | 1325 | 1325 | 1500 | 1500 | 1640 | 1640 |
| W（mm） | 535 | 730 | 730 | 730 | 780 | 780 | 890 | 890 |
| D（mm） | 380 | 470 | 470 | 470 | 500 | 500 | 635 | 635 |
| d1（mm） | Φ197 | Φ383 | Φ383 | Φ383 | Φ440 | Φ440 | Φ550 | Φ550 |
| d2（mm） | Φ231.5 | Φ413 | Φ413 | Φ413 | Φ475 | Φ475 | Φ583 | Φ583 |
| d3（mm） | Φ254.6 | Φ430 | Φ430 | Φ430 | Φ490 | Φ490 | Φ600 | Φ600 |
| d4（mm） | Φ271 | - | - | - | - | - | - | - |
| d5（mm） | Φ9 | Φ7 | Φ7 | Φ7 | Φ7 | Φ7 | Φ9 | Φ9 |
| d6（mm） | Φ9 | - | - | - | - | - | - | - |
| d7（mm） | - | Φ100 | Φ100 | Φ100 | Φ127 | Φ127 | Φ152.4 | Φ152.4 |
| d8（mm） | - | Φ11 | Φ11 | Φ11 | Φ11 | Φ11 | Φ11 | Φ11 |

## 1.3.4 The Installation Dimension of Hopper




Picture 1-3：SHR-P-30U~SHR-P-90U

Table 1-3：Specifications

| **Model** | **SCH-P-30U** | **SCH-P-60U** | **SCH-P-90U** |
|---|---|---|---|
| h（mm） | 428 | 516 | 637 |
| d7（mm） | Φ100 | Φ127 | Φ152.4 |
| d8（mm） | Φ11 | Φ11 | Φ11 |
| L1（mm） | 180 | 180 | 180 |
| L2（mm） | 210 | 210 | 210 |

## 1.4 Safety Regulations

Strictly abide by the following safety regulations to prevent damage of the machine or personal injuries.

### 1.4.1 Safety Signs and Labels

All the electrical components should be installed by professional technicians.

Turn off the main switch and control switch during maintenance or repair.

Warning! High voltage!

This sign is attached on the cover of control box!

Warning! Be careful!

Be more careful at the place where this sign appears!

Attention!

No need for regular inspection because all the electrical parts in the control unit are fixed tightly!

### 1.4.2 Signs and Labels

| | |
|---|---|
|  | 1. Please clean the suction filter regularly to avoid clogging and ensure proper loading capacity and long life span.<br>2. The one year warranty does not cover the suction filter, please clean the filter carefully. |

## 1.5 Exemption Clause

The following statements clarify the responsibilities and regulations born by any buyer or user who purchases products and accessories from Shini (including employees and agents).

Shini is exempted from liability for any costs, fees, claims and losses caused by reasons below:

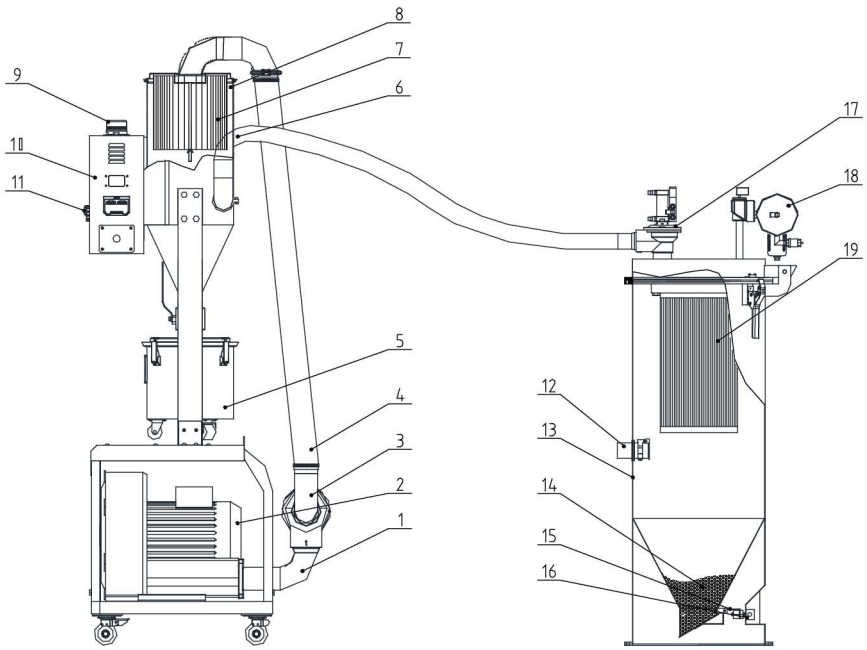
1. Any careless or man-made installations, operation and maintenances upon machines without referring to the Manual prior to machine using.
2. Any incidents beyond human reasonable controls, which include man-made vicious or deliberate damages or abnormal power, and machine faults caused by irresistible natural disasters including fire, flood, storm and earthquake.
3. Any operational actions that are not authorized by Shini upon machine, including adding or replacing accessories, dismantling, delivering or repairing.
4. Employing consumables or oil media that are not appointed by Shini.

# 2. Structure characteristics and working principle

## 2.1 Main Functions

SAL-UGP "Euro" separate-vacuum hopper loader are applicable to convey the mixture of plastic granule and powder or all powders. It makes good use of motor generated vacuum to form a pressure gap within hopper, by which means to convey.

### 2.1.1 SAL-UGP Working Principle




Names of Parts：

1. Blower suction pipe 2. Blower 3. Vacuum breaking diaphragm valve
4. steel wired plastic pipe 5. Dust collecting barrel 6. Air suction pipe 7. Filter 1
18. Filtering barrel9. Alarm light 10. Electric cabinet 11. Main switch
12. Material inlet 13. Hopper 14. Material 15. Discharging plate
16. Reed switch 17. Diaphragm valve 18. Air accumulator 19. Filter 2

Pic. 2-1：SAL-UGP Working Principle

After startup, magnetic reed switch (16) detected no way, blower (2) the work, make produce vacuum negative pressure inside the hopper (13), at the same

time, the discharging plate (15) to close, material storage VAT (14) with air pressure difference from into the material inlet (12) into the hopper, when absorbing material after the completion of the action, the fan to stop running, the raw material will be due to gravity whereabouts, backward raw materials under magnetic reed switch (16) to detect, there is no material, fan delay, open diaphragm valve (17), high pressure gas reservoir air accumulator (18) through near the cleaning device for cleaning the filter 2 (19) and the dust hopper (13), the blower will start again. The alarm light (9) on the electric cabinet (10) will light up and alarm when the material cannot be loaded or is missing for three times. Fan (2) material in the process of absorption, into the duct through cyclone device into the air in the filter 1 (7), a handful of dust adhesion on the filter, when the fan of absorb action, after the completion of the installation between the fan and the filter of vacuum breaking diaphragm valve (3) produces a reverse impact air flow to filter, fell to the dust on the filter to the dust collecting barrel (5).

## 2.2 Description of Electrical Components

### 2.2.1 Magnetic Proximity Switch

1) Used for SAL-UGP series for control of material conveying and material shortage alarm.
2) It is installed at the bottom of material hopper.

Picture 2-2：Magnetic Proximity Switch

# 3. Installation and Debugging

This series of models only could be applied in working environment with good ventilation.

Read this chapter carefully before installation of the machine. Install the machine by following steps.

Power supply should be fixed by qualified technicians!

## 3.1 Machine Location

Installation Notice:

The machine can only be installed in vertical position, make sure there's no pipeline, fixed structure and other object that may obstruct machine installation or cause item damage, human injuries above the selected location and adjacent areas.

For easy maintenance, leaving 1m space around machine is suggested.

***Important: Keep machine 2m away from the inflammable materials.***

The machine must be placed on the ground level to ensure balance state, and to remove the accumulated condensing water. If machine is need to install on a higher level (scaffolding or interlayer), it should make sure that the structure and size could withstand the machine.

## 3.2 Installation steps

1) Place the vacuum powder suction loader in a proper place and connect the power cord.
2) Install the attached vacuum hopper on the IMM and connect the signal line to the suction loader.
3) Connect the suction port of the vacuum hopper to the suction port of the corresponding powder suction host machine with a steel hose, and connect the suction port of the powder suction loader to the suction port of the vacuum hopper.
4) Connect the high-pressure air pipe to the compressed air interface of the powder suction loader.

### 3.2.1 Power Connection

1) Make sure the voltage and frequency of the power source comply with those indicated on the manufacturer nameplate that attached to the machine.

2) Power cable and earth connection should conform to your local regulations.

3) Use independent electrical wires and power switch. Diameter of electrical wire should not be less than those used in the control box.

4) The power cable connection terminals should be tightened securely.

5) The machine requires 3-phase 4-wire power source, connect the power lead (L1, L2, L3) to the live wires, and the earth (PE) to the ground.

6) Power supply requirements:

   Main power voltage: +/- 5%

   Main power frequency: +/- 2%

***7) Please refer to electrical drawing of each model to get the detailed power supply specifications***

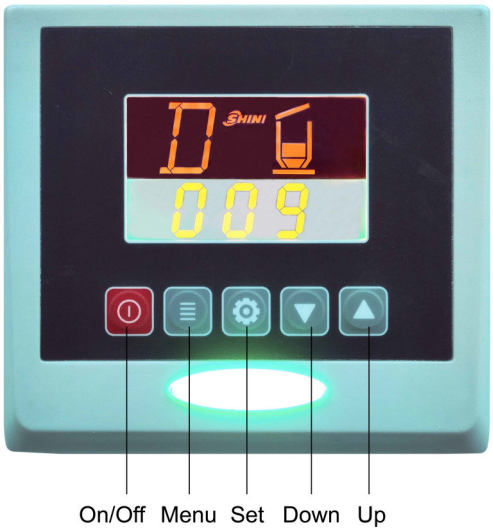
### 3.2.2 Compressed Air Supply

Table 3-1：Compressed Air Specification

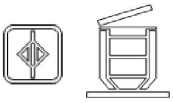
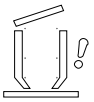
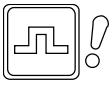
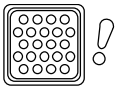
| Items | Value | Remark |
|---|---|---|
| Quality Grade | 335 | Solid particle content ≤ 5mg/m3, dew-point temperature≤-20℃, oil content ≤ 25mg/m3, oil content ≤ 25mg/m3.<br>(Chinese standard: GB/T 13277-1991) |
| Air pressure (bar) | 3~5bar | |
| Air quantity (L/hr) | ~10L/hr | |
| Pipe dimension | PM20 | Quick coupler(Chinese standard) |

# 4. Application and Operation

## 4.1 Control panel description




Pic. 4-1：Description of operation panel keys

| NO. | Symbol | Name | Description |
|---|---|---|---|
| 1 |  | ON/OFF | Start/stop the machine |
| 2 |  | MENU | Enter or exit parameter setting |
| 3 |  | SET | Modify or confirm machine parameters |
| 4 |  | DOWN | Move the menus down, and reduce the value |
| 5 |  | UP | Move the menbus up, and increase the value |
| 6 |  | FULL MAT.LIGHT | It means full materials in the hopper |
| 7 |  | BLENDING | It means the machine is mixing the materials in the hopper |
| 8 |  | MAT.SHUT-OFF | It means the machine is shutting off the materials |
| 9 |  | SHORTAGE ALARM | It means machine alarm for no materials during suction |
| 10 |  | COMMUNICATION | It means the communication is connecting through |
| 11 |  | FILTER MESH CLEAN | It means filter auto cleaning function |
| 12 |  | OVERLOAD ALARM | It means motor overload error |
| 13 |  | SCREEN BLOCKING | Prompt to clean or replace the filter screen |

## 4.2 Parameter Setting

In OFF mode，Press  , and enter parameter setting.

Press  or  to select parameter，press  enter setting.

Press  or  modify parameters，press  Confirm revision.

E.g：set “Suction time setting” 15S

In OFF mode，Press  and enter parameter setting.

Press  or  key to select the function code F.01, and press  key to enter.

Press  or  key to change it to parameter 15, and press  key to confirm after modification.

### 4.2.1 Parameter Setting

| Code | Status | Parameters | |
|---|---|---|---|
| | | Preset value | Range |
| F.01 | Suction action time<br>Motor suction time when there’s a shortage of materials, which is also the vacuum breaking valve’s working time.<br>Corresponding action: **D** | 15 secs. | 5-127 secs. |
| F.02 | Shut-off action time<br>Start with the suction action at the same time, and set the shut-off time. Set 0 as not start. | 0 | 0-100 secs. |

| | | | |
|---|---|---|---|
| F.03 | Mixing proportion<br>Start at the same time with the suction action, and set the mixing proportion.<br>Time calculation method: suction time * [F.03]%<br>Set 0 as not start. | 0%<br>Not start | 0-100% |
| F.04 | Mixing mode<br>The number of layers of mixing action when it starts mixing.<br>For example: the suction time is 20sec, the mixing proportion is 10%, the number of layers is 2, and then the mixing action is 9s—1s ----9s---1s<br>Set single layer's working, and the suction time range is 5-99 secs.<br>Set double layers' working, and the suction time range is 17-99 secs.<br>Set three layers' working, and the suction time range is 32-99 secs.<br>Set four layers' working, and the suction time range is 46-99 secs.<br>If the suction time changes, the min. action time is less than 1 sec. after calculation, and the program will force to change the action time to 1 sec. | 1 | 1-4times |
| F.05 | Mixing action count cycle start setting<br>Count from the first start-up, and start once mixing action after several times of repeated suction startings.<br>Set 1 as mixing materials every time.<br>Set [F.03] to 0 without mixing. | once | 1-9 times |
| F.06 | Setting time of cleaning before suction<br>Set 0 as the no screen cleaning before suction.<br>Corresponding action: R01 | 0 secs. | 0-99 secs. |
| F.07 | Setting time of screen cleaning after suction<br>Set 0 as no screen cleaning after suction.<br>Corresponding action: R11 | 5 secs. | 0-99 secs. |
| F.08 | Screen cleaning cycle<br>It starts once [F.06] or [F.07] cleaning action only after several times of repeated suction actions.<br>Set 1 as cleaning the screen cleaning at every suction. | 10 times | 1-99 times |
| F.09 | Circulating suction waiting time<br>Waiting time before a new suction action starts after each suction action.<br>Set 0 as not waiting.<br>Waiting time before a new suction action starts<br>Corresponding action: N03 | 0<br>(Unit 10 secs.) | 0-9990 |

| | | | |
|---|---|---|---|
| F.10 | Shortage metering alarm<br>Set the number of times that the material doesn't fall into the hopper, and it should alarm after several times of this error occurs.<br>Alarm cleaning mode:<br>1.The alarm will dismiss when it feeds the materials again.<br>2. Ent key on the panel can be cancelled.<br>3.Turn on the power again.<br>Set 9 as cancelling this function.<br>Corresponding action: A.01 | 3 | 1-9 times |
| F.11 | Shutdown alarm for the times of material shortage<br>Set the number of times that no material falling into the hopper. The times of material shortage that it should alarm.<br>1.ENT key on the panel can be cancelled.<br>2.Turn on/off the power again.<br>Corresponding action: A.04 | 3 | [F.10]-99 |
| F.12 | The time waiting for motor stoppage (suitable for sal-430 / 460) .<br>After motor starts, it only takes next action after the time countdown is finished. | 20 secs. | 0-99 secs. |
| F.13 | Buzzer alarm type<br>0: Lasting alarm<br>1: Slow and interrupted alarm<br>2:Fast and interrupted alarm | 0 | 0-2 |
| F.14 | Motor delay stop time<br>After [F.01] suction time is ended, the delay time before motor stop. | 0 secs. | 0~999 secs. |
| F.15 | Motor working time<br>Check motor working time and clear the time.<br>The method to clear the motor working time: Set the setting value as 0, and press ENT key to cancel. | 0 (unit: 10 hrs.) | 0-999<br>Only 0 means clearing the time. |

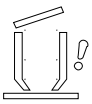
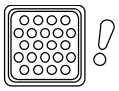
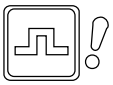
### 4.2.2 Communication Parameter Setting

Press  key and  key together for 3 secs. to enter parameter setting screen.

| Code | Functional Description | Parameters | |
|---|---|---|---|
| | | Preset value | Range |
| F.30 | Comm. address | 1 | 1-99 |
| F.31 | Baud rate<br>0---19200 1---9600 2---4800 | 1 | 0-2 |
| F.32 | Odd-even check<br>0---No test 1--- Odd parity 2--- Even parity | 0 | 0-2 |

## 4.3 Alarm Procedure

Description of blender controller, alarm status and solution method

| Panel Code | Alarm Causes | Solution Method |
|---|---|---|
|  | Shortage alarm [F.10]<br>1. The set suction time is too short.<br>2. The materials can't be absorbed.<br>3. Suction pipeline is blocked.<br>4. Pipeline suction is too small. | 1) Add materials<br>2) Increase suction time<br>3) Shut down and check the pipe line.<br>When it sucks the materials again, the alarm will dismiss or the ENT key on the panel can also be cancelled or turn on the power again. |
|  | Filter warning<br>Filter screen blocking | 1) Shut down and clean the filter screen or replace filter screen.<br>The alarm will dismiss when it turns on/off the power again or it can be cancelled by clicking the ENT key on the panel. |
|  | Motor overload alarm<br>When an overload alarm occurs, it alarms for shutdown. | 1) If the motor is damaged, replace the motor.<br>2) The setting of thermal overload is wrong, adjust the setting value again.<br>Check the cause of motor overload and turn on the power again; |

# 4.4 Operaton Procedure Description

| Panel Code | Action Description | Corresponding Parameter | Parameters | |
|---|---|---|---|---|
| | | | Factory Setting | Range |
| R01 | Filter screen cleaning | F.06 | 3 secs. | 0-99 secs. |
| R02 | Waiting for motor stop | F.12 | 3 secs. | 0-99 secs. |
| D | Absoring the materials (vacuum breaking valve action) | F.01 | 15 secs. | 5-127 secs. |
| | Absoring masterbatch material (Close the vacuum breaking valve after the action is stopped) | F.03 | 0% | 0-100% |
| | | F.05 | 3 | 1-9 次 |
| N01 | Waiting time | F.12 | 3 secs. | 0-99 secs. |
| R11 | Cleaning filter screen<br>The materials start to discharge to the hopper | F.07 | 0 secs. | 0-99 secs. |
| R12 | Waiting motor stop | F.12 | 3 secs. | 0-99 secs. |
| N02 | Waiting materials completely discharge to the hopper | F.20 | 10 secs. | 5-99 secs. |
| N03 | Waiting for material circulating suction | F.09 | 0 secs. | 0-9990 secs. |
| P | Waiting for suction confirmation | | | |

## 4.5 Data Resetting

① Turn off the machine plate power

② Short circuit the two terminals of J2

③ Turn on the machine plate power

③ Remove the short circuit of J2's two terminals after three secs.

⑤Completed

***Notes: All parameter settings will be reset to factory settings. Please use this function carefully.***

## 4.6 Communication Address（protocol modbus-RTU）

| Address (keeping deposit zone） (decimal) | Parameters | Reading R/ Writing W | Default Parameter | Min. Value | Max. Value | Unit |
|---|---|---|---|---|---|---|
| 0 | Current action | R | / | | | / |
| | bit 0 shutdown | | | 0 | 1 | |
| | bit 1 standby | | | 0 | 1 | |
| | bit 2 absorb materials | | | 0 | 1 | |
| | bit 3 wait for material discharge | | | 0 | 1 | |
| | bit 4 cleaning the screen | | | 0 | 1 | |
| | bit 5 wait for motor stopping | | | 0 | 1 | |
| | bit 6 screen blocking alarm | | | 0 | 1 | |
| | bit 7 shortage alarm | | | 0 | 1 | |
| | Bit 8~bit 16 undefined | | | | | |
| 1 | Real-time info. | R | / | | | / |
| 3 | Suction action time | R/W | 15 | 5 | 127 | S |
| 4 | Screen cleaning action cycle | R/W | 10 | 1 | 99 | Once |
| 6 | Screen cleaning setting time | R/W | | 0 | 99 | S |
| 7 | Discharge checking time | R/W | 10 | 5 | 99 | S |
| 8 | Standby time after motor running | R/W | 0 | 0 | 99 | S |
| 9 | Screen cleaning setting time after suction | R/W | 5 | 0 | 99 | S |
| 10 | Waiting time for circulating suction | R/W | 0 | 0 | 9990 | 10S |
| 13 | Input and output status | R | / | | | / |
| | bit 0 shortage input signal | | | 0 full mat. | 1 mat. shortage | |
| | bit 1 filter screen blocking input signal | | | 0 no blockin | 1 blocking | |
| | bit 4 suction output | | | 0 no | 1 output | |
| | bit 5 spraying valve output | | | 0 no | 1 output | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | bit 6 alarm output | | | 0 no output | 1 output | |
| | bit7~bit15 undefined | | | | | |
| 14 | Current action | R | / | | | / |
| | bit 0 shutdown | | | 0 | 1 | |
| | bit 1 standby | | | 0 | 1 | |
| | bit 2 absorbing | | | 0 | 1 | |
| | bit 3 waiting for material discharge | | | 0 | 1 | |
| | bit 4 clean the filter screen | | | 0 | 1 | |
| | bit 5 wait for motor stop | | | 0 | 1 | |
| | bit 6 filter blocking alarm | | | 0 | 1 | |
| | bit 7 shortage alarm | | | 0 | 1 | |
| | bit8~bit15 undefined | | | | | |
| 15 | Startup & shutdown | W | / | 0 | 1 shutdown | / |
| 16 | Suction action time | R/W | 15 | 5 | 127 | S |
| 17 | Mixing proportion | R/W | 0 | 0 | 100 | % |
| 18 | Circulating startup setting of mixing action counting | R/W | 1 | 1 | 9 | times |
| 19 | Filter screen action cycle | R/W | 3 | 1 | 99 | times |
| 20 | Circulating suction waiting time | R/W | 0 | 0 | 9990 | 10S |

| | | | | | | |
|---|---|---|---|---|---|---|
| 21 | Screen cleaning setting time before suction | R/W | 0 | 0 | 99 | S |
| 22 | Screen cleaning setting time after suction | R/W | 5 | 0 | 99 | S |
| 23 | Discharge checking time | R/W | 10 | 5 | 99 | S |
| 24 | Material shortage counting alarm | R/W | 3 | 1 | 9 | times |
| 25 | Material shortage counting stop alarm | R/W | 3 | Mat. shortage | 99 | times |
| 26 | Standby time after motor running | R/W | 20 | 0 | 99 | S |
| 27 | Buzzer alarm type | R/W | 1 | 0 | 2 | / |
| 29 | Motor working time record | R/W | 0 | 0 | 999 | 10h |
| 30 | Full mat. detecting time | R/W | 3 | 1 | 9 | S |
| 31 | Mat. shortage detecting | R/W | 3 | 1 | 9 | S |
| 32 | Mat. shut-off time | R/W | 0 | 0 | 100 | S |
| 34 | Motor delay stop time | R/W | 0 | 0 | 999 | S |
| 35 | Accumulating times of mixing actions | R | 0 | 0 | 0x03 set value | times |
| 36 | Accumulating times of screen cleaning actions | R | 0 | 0 | 0x04 set value | times |
| 37 | Accumulating times of material shortage alarm | R | 0 | 0 | 99 | times |
| 38 | Startup & shutdown control | W | | 0 startup | 1 shutdown | / |
| 39 | Current action | R | / | | | / |
| | bit 0 startup | | | 0 | 1 | |
| | bit 1 standby | | | 0 | 1 | |
| | bit 2 cleaning the filter screen | | | 0 | 1 | |
| | bit 3 wait for motor | | | 0 | 1 | |
| | bit 4 absorb the material | | | 0 | 1 | |
| | bit 5 absorb the masterbatch material (mixing) | | | 0 | 1 | |
| | bit 6 wait for material | | | 0 | 1 | |
| | bit 7 wait for circulating | | | 0 | 1 | |
| | Bit 8 ~bit 15 undefined | | | | | |
| 40 | real-time information | R | / | | | / |
| 41 | Input and output state | R | / | | | / |
| | bit 0 shortage input signal | | | 0 full | 1 mat. | |
| | bit 1 filter blocking input | | | 0 no | 1 blocking | |
| | bit 2 suction output | | | 0 no | 1 output | |
| | bit 3 vacuum breaking output | | | 0 no output | 1 output | |
| | bit 4 mixing output | | | 0 no | 1 output | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | bit 5 spraying valve output | | | 0 no output | 1 output | |
| | bit 6 alarm output | | | 0 no | 1 output | |
| | bit7~bit15 undefined | | | | | |
| 42 | alarm state | R | / | | | / |
| | bit 0 shortage alarm | | | 0 | 1 | |
| | bit 1 mat. shortage stop | | | 0 | 1 | |
| | bit 2 filter blocking | | | 0 | 1 | |
| | bit 3~bit 15 undefined | | | | | |
| 45 | The number of mixing | R/W | 1 | 1 | 4 | layer |
| 46 | Action mode (only can be set in shutdown) | R/W | 5 | 1 | 5 | / |

Notes：R means only reading

W means only writing

R/W means writing and reading

***Note: The password is not set in factory, which can be set by users. In case of loss, please contact us.***

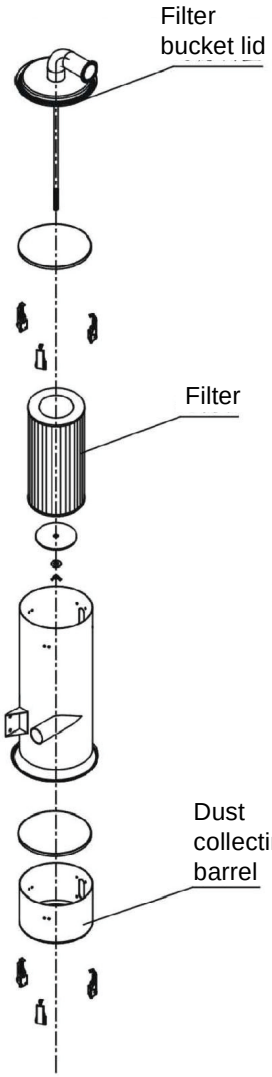
# 5. Trouble-shooting

| Failures | Possible reasons | Solutions |
|---|---|---|
| Motor does not work long after material discharge. | 1. Main power switch or control switch is off or poorly connected. | 1. Turn on main switch and control switch and make sure they are well connected. |
| | 2. Poor contact of magnetic proximity switch. | 2. Adjust or replace. |
| | 3. Signal wire is broken. | 3. Reconnect |
| Motor can not fully load material hopper, or machine sounds material shortage alarm. | 1. No materials left for conveying. | 1. Adding material. |
| | 2. Air pipe breakage. | 2. Firmly lock it or replace. |
| | 3. Cloth filter is blocked. | 3. Clean cloth filter. |
| Motor can not work. | Phase shortage or motor is burt out. | Check or replace. |
| Fuse melts each time you turn on the machine. | Short circuit or motor is burt out. | Check electrical circuit. |
| Motor overload alarm | 1. Filter screen is blocked. | Clean the filter screen and press Reset on the overload relaly. |
| | 2. Phase shortage | Check the electrical circuit and press Reset on the overload relaly. |
| Poor material liquidityin the pipe | Over or lack of air quantity | Adjust air inlet location of the suction box.<br>Avoid small bending of the elbow. |

# 6. Maintenance and Repair

All the repair work should be done by professionals in order to prevent personal injuries and damage of the machine.

Inspection of main body & filter and cleaning of dust collecting bucket




1. Open the filter barrel, take out the filter, and blow dust from the inside to the outside of the filter with a high-pressure air gun.
2. Filter cleaning
3. Take out the dust collection bucket and clean it.
Cycle: Daily

Bag filter

1. Remove the screw from the filter drum cover, remove the filter drum cover, and remove the filter bag to remove the dust.
2. Filter bag cleaning.
Period: daily

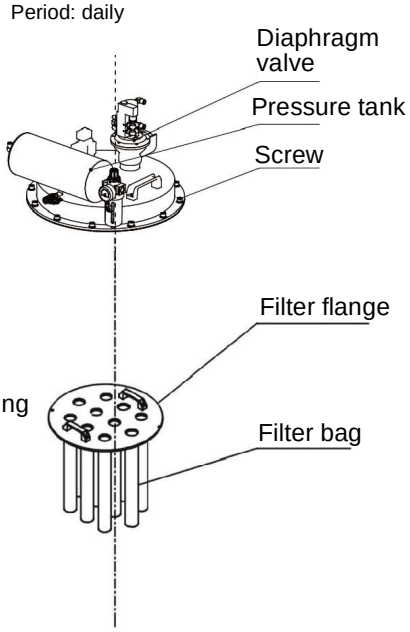
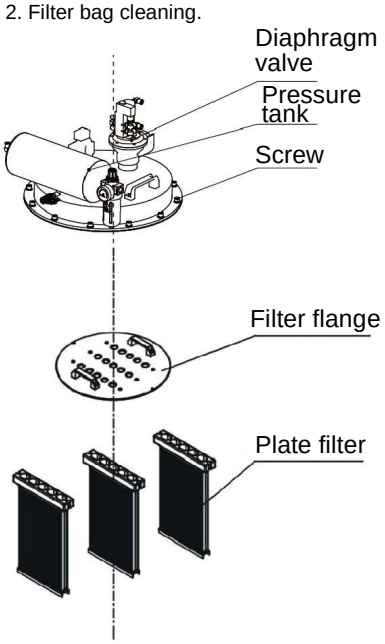



Plate filter

1. Remove the screw from the filter drum cover, remove the filter drum cover, and remove the plate filter to remove the dust.

2. Filter bag cleaning.




## 6.1 Material Hopper

Clean material hopper periodically or when you find conveying capacity reduced. Please loose the spring clips, take down the hopper lid, and take out filter screen. Remove all the dusts and fines on filter screen and inside of material hopper.

## 6.2 Main Body

Take out the air filter to make it clean periodically or when you find conveying capacity reduced. Always keep smooth air flow through air filter to maintain good conveying capacity.

Cleaning steps:

1) Loosen spring clips of filter cover and butterfly screws, and take out the filter.
2) Remove the dusts adhering to the filter to keep good suction power.

## 6.3 Reed Switch, Photoelectric Switch

Reed switch

When the indicator of the reed switch doesn't work, check the switch contact and replace with a new one if it doesn't work well.

1) Unscrew the outer box of the sensor.
2) Adjust the depth or move position the sensor inserted into the box, the indicator lamp lights means that magnetism has been detected and the swith is well worked.
3) If magnetism cannot be detected by magnets, please check whether the switch is bad contacted or damaged.

Photoelectric Switch

When the indicator of the photoelectric switch doesn't work, check the switch contact and replace with a new one if it doesn't work well.

1) Check whether the wires are bad contacted.
2) Please replace with a new one if the switch is damaged.

## 6.4 Weekly Checking

1) Check if there are broken electrical wires or not. Replace the broken wires immediately.
2) Check the function of the keys on the control panel.
3) Check if screws at material inlet and the seal ring are loose or not.

 Note!

Cut off power supply when you check electrical wires.

## 6.5 Monthly Checking

1) Check if the clips of hopper lid is loose or not.
2) Check if the discharging plate is out of shape. If it is, please replace it.
3) Check the contact performance of magnetic proximity switch. If there is any poor contact, place adjust it or replace it.

## 6.6 Maintenance Schedule

### 6.6.1 About the Machine

Model _____ SN _____ Manufacture date _____

Voltage_____Φ_____V Frequency _____ Hz Power _____ kW

### 6.6.2 Installation & Inspection

☐Check if the takeover pipe has been correctly connected.
☐Check if that pipe is locked up by clips.
☐Check if mounting base is locked tightly.

Electrical Installation

☐Voltage: _____ V _____ Hz
☐Fuse melting current: One-phase: A _____ Three-phase: _____A
☐Check phase sequence of power supply.

### 6.6.3 Daily Checking

☐Check main power switch.
☐Check filter mesh.
☐Check working status of the motor.

### 6.6.4 Weekly Checking

☐Check all the electrical cables.
☐Check if there are loose connections of electrical components.
☐Check the screw of the feed-in pipe's flange is loosed or not.
☐Check the air filter.

### 6.6.5 Monthly Checking

☐Check the spring lock on the hopper cover is loosed or not.

☐Check the reversal stop piece is deformed or not.
☐Check the performance of magnetic proximity switch/photoelectrical sensor.